



# Inheritance and Innovation of Nanyang Pyrography Art from the Perspective of Digital Media

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**Abstract.** Nanyang pyrography has a long development history of more than two thousand years since the Western Han Dynasty. As one of the "three treasures of Nanyang", the regional business card has now become China's national intangible cultural heritage. However, with the continuous development of information technology, this excellent traditional manual skill has gradually fallen behind the trend of The Times, showing many problems that need to be corrected and innovative aspects. Therefore, through digital media, which is the most influential and creative form of media today, we will explore the future development path of Nanyang pyrography and offer suggestions for the inheritance and innovation of Nanyang pyrography.

**Keywords:** Digital media; Nanyang pyrography; Intangible cultural heritage; Intangible heritage innovation; Protect and inherit

## 1 Introduction

Pyrography, called "fire brush embroidery" in ancient times, originated in Nanyang city, Henan Province. A unique art of drawing on bamboo, wood, rice paper or silk materials by using a heated iron or electric broiling pen through special techniques such as ironing, smoking and baking<sup>[1]</sup>. Pyrography is extremely rich in expression style, which can not only have the charm of Chinese painting but also achieve the realism of Western painting, which is an unreplicable treasure of Chinese art. According to legend, pyrography first appeared in the late Western Han Dynasty, and in the Eastern Han Dynasty, due to the rescue of the young Guangwu Emperor Liu Xiu by the pyrograph artist Li Wen in Nanyang, Nanyang pyrography was listed as a royal tribute and continued to develop. After the founding of New China, Nanyang Pyrography Factory was the earliest and the most famous. It invented the electric pyrography pen, silk and rice paper pyrography, which greatly enriched the expression of pyrography art, and its works enjoy a high reputation at home and abroad. As one of the "Three Treasures of Nanyang", Nanyang pyrography was selected into the fifth batch of national intangible Cultural Heritage list in 2021<sup>[2]</sup>, and is the representative of painting art in Nanyang region. However, in the 21st century, with the popularization of industrial production,

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the development of information technology level and the change of People's Daily life, Nanyang flatigraphy, as a traditional handicraft relying on regional economy and the inheritance of masters and apprents, has failed to make timely adjustment and transformation, and has entered a low period like many traditional handicraft skills of intangible cultural heritage. Digital media art, as the most vibrant and dynamic form of media art rising in the 21st century, has undoubtedly become the most important and common creation and communication media in the world today with the unparalleled transmission speed, time and space span and creative ability of other media. In the future meta-universe and 5G era, digital media will play a more important role. From the perspective of digital media and the daily consumption interests and learning habits of today's young groups, this paper will explore how to use digital media technologies and means to promote and develop Nanyang pyrography, and point out feasible ways for the inheritance and innovation of Nanyang pyrography. The picture below shows the Nanyang pyrography works that show the theme of Nanyang city flowers(Fig.1).



Fig. 1. A Nanyang pyrograph with the flower rose of Nanyang city as its theme.

## 2 The development status and existing problems of Nanyang pyrography

### 2.1 Development status

According to legend, pyrography originated in the Western Han Dynasty, and after more than 2,000 years of inheritance and development, during which years of war made the pyrography technique almost lost. Later, it was searched and sorted out by a painter in Nanyang area in the Qing Dynasty, and it has formed a relatively fixed creation mode. Nanyang pyrography Factory is the main national heritage and protection unit, and the pyrography tools are mainly iron, iron needle, fire iron and electric cauterizing pen; Materials mostly use wood materials, such as gourd, bamboo, basswood, etc., began to use silk materials after the 1980s, in recent years, such as the development of new materials such as ice-and-fire pyrography (Fig.2); The themes are mainly characters, ancient history, flowers and birds, and even landscapes<sup>[3]</sup>; The main export form of Nanyang pyrography is the most famous pyrography chopsticks, and the inheritance method is mostly passed on to the apprentice through the master's oral way, which is a

kind of family workhouse-style folk art. In 2021, it became a national intangible heritage project, and then Nanyang region and pyrography artists carried out many publicity and popularization activities. Up to now, Nanyang pyrography art, like many traditional skills, still has many existing problems and deficiencies, which seriously affect its development and inheritance in today's social environment.



Fig. 2. Ice-and-fire pyrography.

## 2.2 Existing problem

**Lack of visibility and exposure.** The lack of personal publicity channels and the feeling that there is no need for publicity channels have become an important reason for the current popularity and exposure of Nanyang pyrography decreasing year by year. Most of the craftsmen engaged in the art of pyrography either do not have or do not understand the relevant publicity channels, or they are high in personal popularity and think that there is no need for publicity. Therefore, with the decline of the popularity of Nanyang city, not only foreigners have less and less understanding of Nanyang pyrography, but also young people in Nanyang area have a decreasing cognition of Nanyang pyrography. Most young people have never heard of or seen pyrography works in their growth process, and they are more interested in understanding and learning pyrography techniques and knowledge [4]. At the same time, national art exhibitions lack the exhibition of Nanyang pyrography works, and the video platform also lacks the more official publicity and popularization of Nanyang pyrography art. There are scattered videos of Nanyang pyrography recorded by individuals on the Douyin platform, but most of the lens language and picture are rough, unable to let the audience feel the charm of Nanyang pyrography. On platforms such as B station, there are almost no videos related to Nanyang pyrography. Lack of official and personal quality publicity, which makes the popularity and exposure of Nanyang pyrography decline year by year.

**The insularity of the pyrograph market.** Pyrographers use high-temperature cauteries to create pyrographs on carbonable materials, creating shades of color depending on the degree of carbonization. Therefore, every stroke created on the material is immutable, especially when using soft materials such as rice paper and silk, and a single stroke error can even cause the entire painting to be burned. Therefore, craftsmen are required to have very superb pyrography techniques and long-term thinking, resulting in good pyrography works in the market with a small share and high price, which can not be accepted by young groups and most people's families, so it can not form the

"Matthew effect". Taobao platform search "Nanyang pyrography" or "pyrography" keyword, there is almost no online sale of related goods. From the perspective of creative materials, the characteristics of Nanyang pyrography materials themselves also have certain restrictions on the creation of pyrography, so the subject matter of pyrography works is always limited to flowers and birds, landscapes, portraits and other types. Therefore, in the face of the rapid development and iteration of industrial products, the originally not open soldering market is more narrow.

**The lack of professional talent.** If a craft wants to be inherited, it must pay attention to the cultivation of young professional talents. Nowadays, the income of pyrographers in Nanyang is generally low, and the learning of pyrography technology is a very long process. In order to achieve something, there are very few people who are willing to learn and engage in pyrography art compared with today's popular high-paying Internet majors. At the same time, the older generation of pyrographers also continued the skill inheritance mode of master and apprentice inheritance, oral teaching, and family management, to prevent their exclusive creative techniques from leaking or spreading. This makes it impossible for most young people to learn pyrography techniques, and those young people who can really contact and learn pyrography techniques are not necessarily engaged in the future pyrography art industry. In addition, due to the geographical location of Nanyang and the current urban economic level, Nanyang pyrography is also difficult to attract outstanding talents with strong ability. At the same time, in today's Nanyang higher education institutions and national higher art colleges, there is almost no professional engaged in and research pyrography techniques, so that pyrography has lost the opportunity to be recognized by the public [5]. The learning process is long but the benefit is low, the inheritance method is inefficient, and the regional development degree is limited, all of which make the inheritance and development of Nanyang pyrography subject to major challenges.

### 3 Inheritance and innovation from the perspective of digital media

Pyrography art in the final analysis is the limited productivity of artisans, the lack of pyrography techniques inheritance and publicity, and the creation of themes out of the trend of The Times, so that excellent and exquisite pyrography art can not enter the mass market. Bringing many creative techniques and methods from the perspective of digital media into Nanyang pyrography can greatly compensate for many defects in the inheritance and innovation of Nanyang pyrography, and at the same time make Nanyang pyrography gain a second vitality in the new social environment and market environment.

#### 3.1 Use the Internet to increase publicity and promotion

According to the survey and research, in recent years, most people in China watch various media every day, video media accounts for the largest proportion of time, and it is increasing. Nowadays, to publicize Nanyang pyrography through video media can

make more people know the art of pyrography at the largest level. At the same time, the current video media also has the ability and effect of bringing goods, which can also create additional revenue while expanding the audience. However, due to the cost of shooting videos and the niche market of Nanyang pyrography, there is no one or company specializing in the production and shooting of videos related to Nanyang pyrography, and there is no unified and more official publicity channel. Now Nanyang city wants to build a national tourism city and provincial deputy central city, Nanyang pyrography can also become a good local characteristics and labels. Therefore, relevant departments should set up an official platform to shoot high-quality videos of Nanyang pyrography, and at the same time hold a nationwide video creation competition for Nanyang pyrography, so that more young people in the region can participate in understanding Nanyang pyrography art and publicize the track of Nanyang pyrography art.

### **3.2 Innovation of traditional pyrography art through new materials and new themes**

The creative materials and themes of pyrography have formed a pattern after years of development, and have begun to deviate from the aesthetic and consumption trends of today's mainstream youth market. The use of new materials for pyrography art innovation and attempt, can let more people know about Nanyang pyrography, but also can break through the current material limitations of pyrography art. For example, Sun Baorui, a digital media art teacher at Nanyang Institute of Technology, creatively combined ice and fire together with other modern chemical materials to create a new system of ice and fire pyrography, further enriching the expression of Nanyang pyrography<sup>[6]</sup>. The subject matter of pyrography creation should also be tried and developed in a new way to create pyrography art for young people. For example, B Station UP the main dragon painting, using burned charcoal sticks on the ground in front of their own house to paint the theme of the second yuan, combining the traditional charcoal art with the current aesthetic appreciation of young people, has gained more than 100,000 fans and more than 20 million clicks, and set off the trend of the second yuan of charcoal painting on the Internet. Nanyang pyrography has made such an attempt on a small level, such as the quadratic works of cooperation between Nanyang pyrography craftsmen and Nanyang Normal College students, but it has not been tried on mainstream media platforms and mainstream sales platforms. Through new materials and new themes, Nanyang pyrography opens the market of young people, which is conducive to the inheritance and promotion of Nanyang pyrography.

### **3.3 Extract the technical and formal characteristics of pyrography and create digital media art works with related themes**

Teacher Xin Kuanliang extracted the painting form and technique characteristics of Han Dynasty picture bricks and stone, and applied them in the design of the comic book cover of the Romance of the Former Han Dynasty, which won unanimous praise for its distinctive stylized characteristics(Fig.3). The foreign Oscar winning animated short film "Dear Basketball" also uses sketch techniques to create stylized animation, which

has won unanimous praise. As a painting art form with distinct characteristics, Nanyang pyrography has very exquisite technical characteristics. It can be applied to the creation of most modern paintings. However, it has been limited by materials and themes, and can not get widespread publicity and popularity.



Fig. 3. Han Dynasty picture bricks and Romance of the Former Han Dynasty comic strip cover.

By extracting and summarizing the techniques and formal characteristics of Nanyang pyrography, a complete set of painting techniques with strong style and expression can be formed, which has become a useful tool for painting creators. By using Nanyang pyrography techniques to create related illustrations or animation works, we can not only increase the popularity of Nanyang pyrography, but also preserve and inherit the creative techniques of Nanyang pyrography to the greatest extent.

### 3.4 Make use of Internet + technology and AR technology for DIY and mass production

Internet technology has the characteristics of safety, efficiency and wide dissemination. At present, there are many ways to write calligraphy by robots or directly simulate the strokes of calligraphy masters through software, which greatly promotes and uses the art of calligraphy and also provides a way of thinking for the creation of pyrography art. By collecting the model and technique performance of the pyrographer, a relatively complete library of Nanyang pyrography techniques can be formed, and then the brush simulation can be carried out by computer software, so that people can DIY their own pyrography works through the network. Then contact the factory or the artisan to customize the pyrograph work. Although machine pyrography cannot replace manual pyrography, it is much higher than manual pyrography in terms of transmission. At the same time, it can also save labor costs to the maximum extent, so that people can get affordable Nanyang pyrography works, only when everyone can afford to use it, can become a business card of regional culture, can get a greater degree of dissemination and promotion.

### 3.5 Cultivate young people's love of pyrography art and make video games with related themes

According to the "China Game Industry Report 2021" released by the Game Working Committee of the China Audio and Digital Association (GPC) and the China Game Industry Research Institute, the number of game users in China has reached 666 million, and one out of every two people have contacted and played games [7]. With the continuous expansion of the game industry, serious games have become a key topic in the field of game research and become one of the important ways for people to learn and entertain themselves. The learning and experience of traditional pyrography techniques requires the operation of high-temperature iron rods or electric cautery pens, which has great potential dangers, especially for children's experience and learning, and should not be controlled, but it is difficult to get a sense of experience if you just watch and do not operate. By making Nanyang pyrography into a serious game, you can learn and experience the related knowledge of pyrography art in the maximum safe range through a mouse, a drawing board or even a VR device. Free from the restrictions of time and space, people can also experience the interest and charm of pyrography art in their own homes, which greatly enhances the dissemination and influence of Nanyang pyrography.

## 4 Conclusions

As a Chinese intangible cultural heritage with a long history, exquisite techniques and exquisite works, Nanyang pyrography can be passed down for thousands of years, and it must have its wide audience in every era. It has passed the baptism and test of history, and is a real national treasure, a part of excellent Chinese culture, and a key for Chinese literature and art to go abroad and face the world. There are still many values worth exploring and protecting. In today's information age and the future era of the Internet of Things, Nanyang pyrography art can only be transformed and innovated in combination with The Times, in order to continue to have vitality and vitality, rather than always requiring our careful care, and even the cold collections that will eventually be placed in museums. Nowadays, in Nanyang area, pyrography art has begun to enter the classroom of colleges and primary and secondary schools, and began to popularize the history and techniques of pyrography art to young people. At the same time, more and more people began to explore the future of Nanyang pyrography from many aspects, and better inherit and develop Nanyang pyrography. And one of the most can not be ignored and the most lacking at present, is the innovation and power of digital media.

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